

ABSTRACT OF THE DISCLOSURE

The present invention relates to a new method for radiolabeling
5 chemical compounds. The new method attains the goals of simplicity, high
radiochemical yields, speed, versatility, and automation. An HPLC injection
loop on an HPLC injection valve is loaded with a solution of precursor and the
radiolabeling reagent is passed through the loop. The contents of the loop are
then quantitatively injected onto the HPLC column for purification.
10 Radiochemical yields are equal to or superior to conventional solution
methods in all cases, even though no heat need be applied. Since no vials,
transfer lines, cooling, heating, or sealing valves are required, no transfer
losses occur, yields are high, and clean-up is minimal. This "loop method" is
ideal for the preparation of radiolabeled compounds, in particular those
15 prepared from [^{11}C]-iodomethane.